4. Weft knotting ..... Knotted Lace Coil.

B. Active and passive elements.

1. Weft spiral ..... Twisted Coil.
2. Weft twisting ..... Twisted Coil.
3. Weft interlacing ..... Interlaced Coil.
4. Weft looping ..... Looped Coil.

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FUSARIUM WILT OF CABBAGE

Wilt or "yellows" disease of cabbage, due to an undescribed species of *Fusarium,* has been known in this department for some years, as a trouble of minor importance, but it is now gaining such headway in some cabbage sections that active measures will have to be taken to combat it.

Some of the important symptoms are: retarded growth, wilting of the foliage, yellowing and dropping of the lower leaves. Later the upper leaves are affected and drop off, leaving the stem bare. In some cases one half of the leaf turns yellow while the other half retains its normal green color for a time. Microconidia are present in great numbers in the water-carrying vessels of the living plant. Soon after the death of the plant, pinkish masses composed of macroconidia form abundantly on the surface.

This disease was first observed by Dr. Erwin F. Smith in 1895. Experiments made by him in 1899 point to the soil as the source of infection. In 1900 Mr. W. A. Orton, of the U. S. Department of Agriculture, made field observations on the disease in South Carolina, and isolated the fungus, but did not carry on further work.

In April, 1908, the writer isolated the fungus from some material sent in from the south. During the past summer the disease has been reported from several states. In the kraut district of northern Ohio it has been very destructive.

Pot experiments were started in one of the greenhouses, to determine the parasitism of the fungus. After the cabbage plants had been growing in the pots for about ten days, pure cultures of the fungus were mixed into the soil, care being exercised not to injure the rootlets. In about three weeks some of the plants began to show symptoms of the disease. An examination of the plants a little later showed 83 per cent. of successful inoculations. None of the controls contracted the disease. The fungus was again recovered from one of the diseased plants, fresh soil was secured, young plants set out and inoculated as in the previous case with pure cultures of the *Fusarium* isolated from one of the previously inoculated plants. The greenhouse conditions for these later experiments were very unfavorable, but a fair percentage of the inoculations were successful. The controls did not contract the disease. This disease will be studied further.

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THE SEPARATED BLASTOMERES OF CENTRIFUGED EGGS OF ARBACIA

In recent years embryologists have been attempting to find out the rôle in development played by the visible materials of the egg (pigment, yolk, oil, etc.); whether they are organ-forming materials or merely passive inclusions. By no means has a uniform conclusion been reached.

In the eggs of *Arbacia,* the experiments of Lyon and Morgan show that the visible substances, by means of the centrifuge, can be thrown into any part of the egg without affecting in any way the embryonic development up to the pluteus. The simple experiment which I wish to record adds further proof that the visible substances in this particular egg are not organ-forming materials. Driesch and Morgan have shown that the one half, one fourth, one eighth and one sixteenth blastomeres of the sea-urchin egg are capable of developing into normal but smaller plutei. Lyon further showed in the centrifuged eggs of *Arbacia* that the visible substances separate readily into four distinct layers and that the first cleavage is nearly always at right angles to the stratification, but some few are parallel to it. The purpose of my experiment was to take those centrifuged eggs in which the first division plane was parallel to the stratification, separate the first two blastomeres and see